Preliminary Science Flight Report
Operation IceBridge Antarctica 2011

Flight: **GV-FL11**
Mission: **LVIS-Thwaites2**

Flight Report Summary

Aircraft	**NSF G-V (N677F)**
Flight Number	11
Flight Request	118003
Date	Wednesday October 26, 2011, DOY 299
Purpose of Flight	Operation IceBridge Mission, LVIS Thwaites2
Take off time	12:52 UTC from Punta Arenas (SCCI) on October 26, 2011
Landing time	23:28 UTC at Punta Arenas (SCCI) on October 26, 2011
Flight Hours	10.7
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None
Accomplishments	• High-altitude survey (~41,000 ft pressure altitude) of grid lines • Completed mission as planned. 100% data collected over planned survey lines. • Data collected over ice sheet during transit to and from (~1200 km), • Conducted roll and pitch maneuvers for calibration at start/end of flight
Geographic Keywords	Antarctica, Thwaites glacier, West Antarctic Ice Sheet, WAIS
ICESat/CryoSat Track	Survey lines cross numerous ICESat tracks.
Repeat Mission	Numerous crossovers with previously collected PIG survey lines.

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
LVIS	☑	☒	☑	55 GB	None
POS/AV (510 + 610)	☑	☑	☑	5 GB	None
LVIScameras(2)	☑	☒	☑	50 GB	None
G-V Onboard Data	☑	☑	☑	10 MB	None

Mission Report (Michelle Hofton, Mission Scientist; Bryan Blair, Instrument Operator; Scott Luthcke, OIB Science Team)

This LVIS NSF G-V flight successfully completed a 40 km grid survey of the interior of Thwaites with 100% data collection. A total of four ~200 km lines and two ~125 km survey lines were flown. These data extend the Thwaites grid survey inland from the previously flown coastal survey lines, and provide an initial coarse grid survey of Thwaites to be filled in at higher resolution in subsequent missions. The survey is part of the overall deployment plan to collect grid data over a large region that encompasses the entire Antarctic Peninsula to the Getz Coast

In addition to the grid survey, ice sheet surface data were collected during transit to and from the gird survey target for a total of ~1000 km of additional data collection over Pine Island Glacier area to the inland Thwaites survey lines. The transit data provides a robust change, and inter- and intra-mission calibration data set as numerous survey line crossings of the following were collected: ICESat tracks, lines flown in previous years, and lines flown this year from different missions and within the current mission. .

Weather conditions at the target survey area were very good, as well as over large distances of the transit lines including Pine Island Glacier.

The LVIS sensor worked very well. Data was successfully collected over the survey lines and on portions of the transit over land to/from the target area. The camera was operated in cloud free areas.

Roll and pitch maneuvers were carried out on the transit to/from Antarctica.

Individual instrument reports from experimenters on board the aircraft:

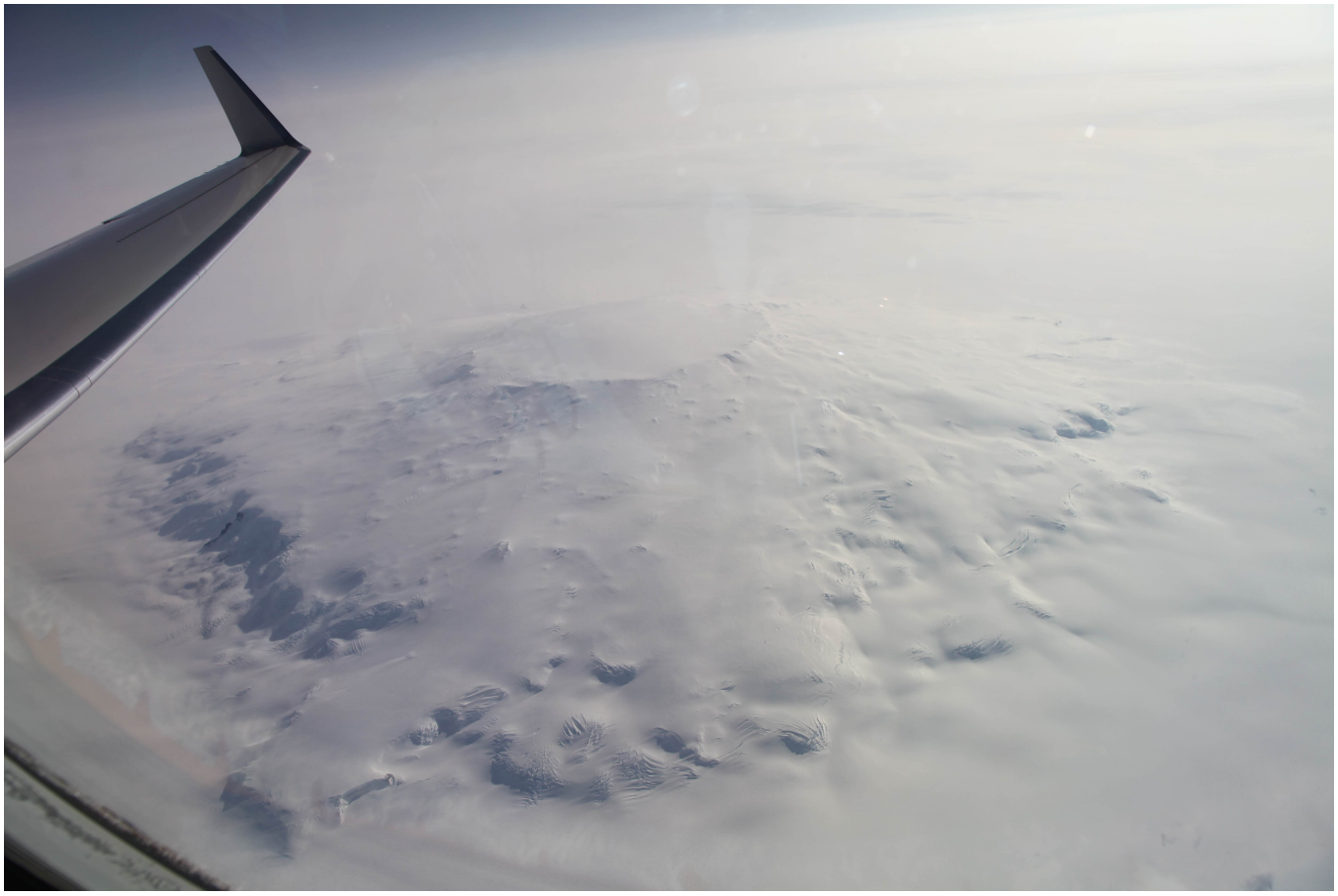
LVIS: The LVIS system worked well.

POS/AV: Systems worked well. No issues.

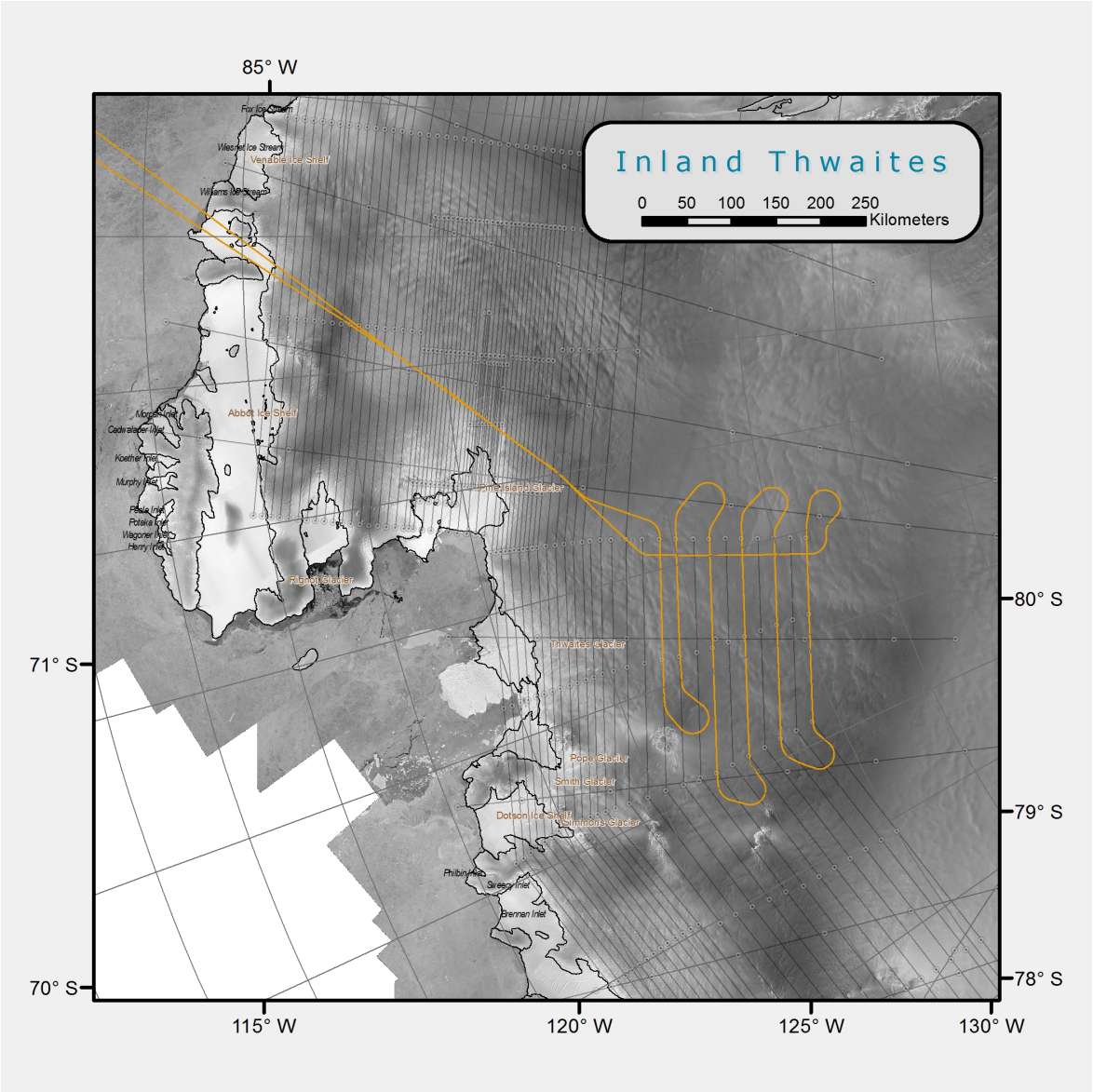
LVIScam: System worked well. No issues.

G-V onboard data: System worked well.

Mt. Takahe as viewed from the NSF G-V while collecting LVIS altimeter data along the inland Thwaites grid lines.



Survey lines mapped with NASA's LVIS during today's NSF G-V flight.



Flight Hours Summary

Flight	Date	Aircraft Flight #	Data Flight#	Duration (hr)	Running Total(hr)	Remaining Science Hours*
						100.00
PUQ-PUQ	10/07/11	RF01	GV-FL01	10.7	10.7	89.3
PUQ-PUQ	10/08/11	RF02	GV-FL02	10.4	21.1	78.9
PUQ-PUQ	10/10/11	RF03	GV-FL03	10.7	31.8	68.4
PUQ-PUQ	10/12/11	RF04	GV-FL04	10.3	42.1	58.4
PUQ-PMC	10/13/11	FF01	-	1.9		
PMC-PUQ	10/14/11	FF02	-	2.1		
PUQ-PUQ	10/14/11	RF05	GV-FL05	1.4	47.5	52.5
PUQ-PUQ	10/15/11	RF06	GV-FL06	10.5	58.0	42.0
PUQ-PUQ	10/17/11	RF07	GV-FL07	10.9	68.9	31.1
PUQ-PUQ	10/19/11	RF08	GV-FL08	10.5	79.4	20.6
PUQ-PMC	10/20/11	FF03	-	1.9		
PMC-PUQ	10/21/11	FF04	-	2.1		16.6
						+50
PUQ-PUQ	10/22/11	RF09	GV-FL09	10.4	93.8	55.2
PUQ-PUQ	10/23/11	RF10	GV-FL10	10.9	104.7	44.3
PUQ-PUQ	10/26/11	RF11	GV-FL11	10.7	115.4	33.6

* 50 additional mission flight hours added (10/21/11)